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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/736,692

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Robert G. Mejia

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INTELLECTUAL PROPERTY ADMINISTRATION

FORT COLLINS, CO 80527-2400

EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT

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2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/736,692	Applicant(s) MEJIA ET AL.	
	Examiner Aristotelis M. Psitos	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 26, 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ✓ | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Applicant's response of 6/11/07 has been considered with the following results.

1. Claims 15,16, 21-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/11/07.

Applicant's election of the invention of Group I in the reply filed on 6/11/07 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It is also noted that the response had an obvious typographical error, i.e., claims 1-14 are elected (along with 26-27), and not claims 1-19 as recited in the first full paragraph on page 9 of the above noted response.

Additionally, since applicant has canceled claims 17-20 in their response of 1/17/07, the inclusion of such canceled claims in the restriction requirement was improper.

Therefore, only claims 1-14, 26 & 27 are examined, and the remaining pending claims 15,16,21-25 have been withdrawn from consideration.

Claim Objections

Claims 5 and 26 are objected to because of the following informalities: Although independent claim 1 and the preamble of claim 26 indicate a "sensor device", the inclusion of the limitations of claim 5, paralleled in claim 26 line 3 introduce a record medium, and hence the examiner cannot reconcile the "sensing device" which inclusion of such limitation. The examiner interprets claim 5 as attempting to broaden the parent claim – a device – to that of a "system" which includes the record medium defined. Appropriate correction is required.

Response to Arguments

Applicant's arguments filed 1/17/07 have been fully considered but they are not persuasive.

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Parent claim 1 is drawn to a sensing device, and not to a "system", combination of diverse elements.

Hence dependent claim 5 attempts to broaden the scope of the parent claim, and such is Improper.

Similar logic/argument is applied to claim 26. The objections are maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 9-10,12-14, 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Azuma et al (cited by applicant –('132).

Azuma et al discloses – see abstract – a sensing device – comprising of

A cantilever, and a FET (field effect transistor) element. Furthermore, the overall disclosure also provides for a probe – see the abstract for instance which clearer depicts such elements.

Furthermore, this device is used in an atomic resolution storage system – desired use of claims 6 and 9. Azuma et al also describes the use of a record medium as claimed/defined by claim 5.

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Additionally, the Azuma et al reference provides for an appropriate circuit as required by claim 9.

With respect to claim 12 – method of using the device, such a method is met when the system of Azuma et al operates.

With respect to claims 15 and 21, obviously a FET is formed, an electric field is generated and the FEAT is appropriately gated. The limitations of claims 16, 22, 23 and 25 are considered self-evident.

Response to Arguments

Applicant's arguments filed 1/17/07 have been fully considered but they are not persuasive.

Applicant argues:

a) " a sensing device including "a device associated with one of the cantilever and the medium which is responsive to changes in electrical field between the medium and the cantilever caused by a distance between the medium and the cantilever changing.", is not found in the reference.

Applicant's attention is drawn to the discussion commencing at col. 1 line 44 till col. 2 line 13.

Such rebuts the above argument.

b) Independent claim 25 is directed to a sensor device comprising "FET sensing means disposed with a second of the cantilever and the medium for responding to changes in an electric field induced by a change in clearance between the medium and the cantilever."

The electrostatic/ electric conductivity of the system is so interpreted.

c) Independent claim 12 is directed to a method of using a sensing device comprising "moving a probe supported on a cantilever relative to a medium that has a data indicative topography followed by the probe, the medium being associated with a substrate producing an electric field."

See the above rebuttal focusing upon the disclosure starting at col. 1 line 11.

3. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1,9 above, and further in view of Chang et al.

Claims 4 and 11 further define the device as an induced channel Field effect transistor.

Such elements are well known in the electronic arts and are disclosed see Chang et al.

It would have been obvious to modify the base system of Azuma et al with the above teaching form Chang et al, motivation is as discussed in Chang et al – see col. 1 starting at line 48.

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4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Binning /Dietzel et al.

With respect to the non-conductive surface as part of the medium, either of the secondary references to Binning ('257) (col. 6 lines 62+), or Dietzel et al ('258) (col. 8 lines 8+) teaches the use of such media in this environment.

Selection of an already existing record medium is a selection from among equivalent media present and obvious to one of ordinary skill in the art, i.e., a function of insuring the data medium is not contaminated, cost, reliability, availability, etc.

5. Claims 1,2, 6, and 9 are rejected under 35 U.S.C. 102e as being anticipated by Binning et al.

Binning et al teaches a cantilever – see fig. 2 element 11 disposed with respect to a medium – non-conductive surface – see col. 6 lines 62+. Furthermore, Binning has a device associated with the cantilever and is configured to be responsive to changes in the electrical field between the medium and the cantilever caused by a change in distance there between – see co. 7 lines 10-30 as well as figure 3 element 25. There is also a probe, which is in contact with the surface. See also the description with respect to figure 9.

6. Claims 3-5,7,8,10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1 and 9 as stated in paragraph 5 above, and further in view of Azuma et al

Binning et al lacks the FET limitations.

The use of FET elements in this environment is taught by the secondary reference to Azuma et al – see col. 18 lines 29-37 for instance.

It would have been obvious to modify the base system of Binning et al and use the FETs as switching elements in order to provide electrical connection/disconnect and additionally consuming less power leading to a reduce the overall footprint of the combined reproducing cantilever structure.

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7. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binning et al further considered with Azuma et al.

The references are relied upon for the reasons stated in paragraphs 5&6 above..

These claims are drawn to the method requiring the FET presence, and as such are met by the above combined references as stated in paragraph 6 above.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 26-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed "electric field generating means" Is not clearly disclosed in the remainder of the specification. The examiner cannot map this means. Further elaboration is respectfully required. The disclosure is also objected to for not providing proper antecedent (support) for such. The examiner will not delve into undue interpretation to what elements comprise such a means. Dependent claim 27 falls therewith.

9. Claims 26-27 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention .

The claimed "electric field generating means" Is not clearly disclosed in the remainder of the specification. The examiner cannot map this means. Further elaboration is respectfully required.

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Dependent claim 27 falls therewith.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-14, 26-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 5, 6, 13, 18, 19, 21 and 23 of copending Application No. 10/736600.

This is a provisional obviousness-type double patenting rejection.

The present pending claims identified above of this application are an obvious variant of the above identified claims in the copending application – to wit the inclusion of the "heater" is omitted in these claims.

With respect to method claims 12-14, such "for use" limitations are an obvious variation of the device claims in the copending application.

11. Claims 1-14, 26-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 6, 7, 11-13 of copending Application No. 10/736753.

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The present pending claims identified above of this application are an obvious variant of the above-identified claims in the copending application – to wit the inclusion of the "sensor pod language is omitted in the pending claims.

This is a provisional obviousness-type double patenting rejection.

12. Claims 1,-4, 9-14,26-27 are rejected on the ground of nonstatutory double patenting over claims 1-4,7-10,29,30,35,36 of U. S. Patent No. 7212487 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

a) cantilever, FET element, probe and functional language thereto.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application, which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitamura and Elings et al are cited as illustrative of similar read devices – i.e., topography detection by appropriate electric field variations. *EP 0 984 444 - cantilevered probe (FET)*.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M. Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-Thursday : 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aristotelis M Psitos
Primary Examiner
Art Unit 2627

A handwritten signature in black ink, appearing to be 'APsitos', written over the printed name and title of the examiner.

AMP